

## BIOLOGICAL EVALUATION for SENSITIVE PLANTS

Project: South Fork Restoration and Access Management Plan (SFRAMP)

Ranger District(s): Krassel

Payette National Forest



Motorized trail through Phoebe Meadows proposed for re-route out of wetland

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By /s/ *Kristin Williams*, Aug 20, 2018

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## I. Introduction

The purpose of this document is to review the current information and possible effects of the South Fork Restoration and Access Management Plan on Threatened, Endangered, Proposed, Candidate (TEPC) and Sensitive plants on the Payette National Forest (PNF). No PNF lands are actively managed to maintain suitable habitat or recovery of any Threatened or Endangered plant species. In September 2002, the U.S. Fish and Wildlife Service (USFWS) removed *Spiranthes diluvialis*, *Howellia aquatilis*, *Mirabilis macfarlanei*, *Silene spaldingii* and the Candidate species *Botrychium lineare* from the 90-Day Species List and informed the PNF that they no longer believe these species occur on the PNF. Currently, no consultation or project analysis is required by the USFWS on any Threatened or Endangered plant species. However, USFWS still has an interest in these plants and asked the PNF to continue to work with them on conserving these species (USFWS, 2002).

In July of 2011 the U.S. Fish and Wildlife Service (USFWS, 2011) added white bark pine (*Pinus albicaulis*) to the Candidate list. Currently, no consultation is required for this species but the plant is protected as a Regional Forester's Sensitive species.

Forest botanical survey records and records from the Idaho Heritage Program database indicate the presence of the following Forest Sensitive and Forest Watch species within the project area boundary: *Pinus albicaulis* (whitebark pine), *Allotropa virgata* (candystick); *Calamagrostis tweedyi* (Cascade reedgrass); *Helodium blandowii* (Blandow's helodium); *Lewisia sacajawean* (Sacajawea's bitterroot); *Mimulus clivicola* (bank monkeyflower); *Ribes wolfii* (wolf's current); *Schistostega pennata* (luminous moss); *Triantha occidentalis ssp. brevistyla* (short-style tofieldia) and *Epipactis gigantea* (giant hellibore orchid).

## II. Current Management Direction

The Payette National Forest Land and Resource Management Plan (U.S. Department of Agriculture Forest Service, USDAFS, 2003) emphasizes conservation and recovery of Region 4 Sensitive species, Forest "Watch" plants, and other species at risk where quantity and quality of habitat needed to support viability is a concern (p. III-32). The Regional Forester identifies those species with population viability of concern as Sensitive species. This biological evaluation (BE) addresses the TEPC plant species included on the Fish and Wildlife Service Update of Listed Species (USFWS, 2011), the Regional Forester's Sensitive list, and the plant species included in the Forest Plan.

The Forest plan also directs the PNF to continue to map locations of suitable occupied habitat for Region 4 Sensitive plant species, Forest Watch plants, and globally rare plant communities and to incorporate the information into a GIS database and coordinate with the Idaho Conservation Data Center (ICDC) (USDAFS 2003, p. III-32). The Idaho Conservation Data Center compiles and retains records of documented TEPC plant occurrences on the Payette National Forest (ICDC, 2008). These records and references are consulted during the pre-field analysis to determine if known or suspected Sensitive species or their habitats occur in the project area.

The Forest Plan Goals, Objectives, Standards and Guidelines provide a framework for the effects analysis of impacts to Sensitive and TEPC plant species. The applicability of Botanical Resources Goals, Objectives, Standards and Guidelines to the proposed project are reviewed in the Forest Plan Consistency Checklist (Forest Service, 2019).

This proposed project meets the objectives of the management direction established in the Forest Plan. Actions in this project should not affect the long term persistence of any Sensitive, Watch or TEPC plant species.

### **III. Description of the Proposed Alternatives**

The Forest Service Proposed Action that was scoped to the public was to decommission up to 166.5 +/- unauthorized routes in the project area. Alternative B, as scoped, described decommissioning up to 50 additional miles of closed Maintenance Level 1 'System' roads. Upon more thorough review of existing data, the Forest Service identified these 50 miles of roads previously believed to be unauthorized, to be on the transportation system and Travel Atlas. These roads were previously believed and understood by the Forest Service and communicated to the public and the Collaborative to be unauthorized roads. The Forest Service intent in the proposed action was to intentionally exclude System roads from the suite of decommissioning due in part to the Collaborative recommendation and to allow future management options. The current description in Alternative B, which no longer includes decommissioning of the additional 50 miles of system roads previously thought to be unauthorized roads, will serve to analyze the full range of alternatives. The Deciding Official has the discretion to select all or none of these miles to remove from the System, and a full range of Long Term Storage watershed treatments on ML1 closed System roads that would remain.

#### Alternative A (No Action)

Under this alternative, the existing travel management plan for both public motor vehicle use and administrative access would continue. Motor vehicle use of the unauthorized routes would likely continue at existing levels, resulting in continued impacts to Forest resources. Restoration activities, like Loon Creek/Split Creek Trail, Jakie Creek Bridge and Phoebe Meadows trail, could be undertaken on a case-by-case basis as provided for in the 2003 Revised Forest Plan. Recreation improvements, such as defining and improving camping and parking facilities at the Confluence Site, 33 Bend/Oompaul, Blue Lake and Tailholt Trailhead would not be implemented. No new motorized trails would be established and no watershed improvement actions would be undertaken as part of this planning effort.

Under the No Action Alternative, the MVUM would be updated to match the existing Phoebe Meadows trail alignment as an administrative action and signs would be installed to aid in navigation but the trail tread itself would not be improved or re-routed out of Blandow's helodium occupied habitat.

No Forest plan amendments would be needed to implement Alternative A.

#### Alternative B (Range of Actions)

Alternative B would be to implement a range of actions relating to watershed rehabilitation, motorized and non-motorized access and improvements of recreation facilities within the South Fork Salmon River (SFSR) watershed to address the purposes and needs discussed in the SFRAMP EA.

Actions proposed under Alternative B include:

- consideration of road decommissioning treatments on approximately 143 miles of unauthorized roads, and 3 miles of Hamilton Bar/Three Mile Road;



- definition, installation and/or improvement of dispersed camping, parking, turnarounds, vault toilets and/or visitor use sites at Confluence Site, 33 Bend/Oompaul Dispersed Sites, Loon Lake, Blue Lake and Tailholt Trailhead;
- construction of a bridge over Loon Creek and approximately .7 miles of new, non-motorized system trail to prevent further riparian and wetland impacts from user-created trails;
- stabilization of The South Fork Salmon River bank upstream of the Jakie Creek Bridge on the Cougar Creek Trail (#098) to mitigate the potential that the migrating river channel will eminently compromise the bridge and trail;
- re-routing of the 2-wheel motorized trail currently running through Phoebe Meadows to avoid wet meadow crossings and prevent further alteration to the hydrology of the wet meadow at large and to Blandow's helodium habitat more specifically;
- creation of approximately 14.2 miles of new ATV trail in Little Buckhorn Creek and approximately 9.2 miles of new 2-wheel motorized trail (previously designated non-motorized) on Cougar Creek Trail (#098);
- conversion of ~.1 miles of the Brewer Homestead site road to ATV to allow access to the spring and blockading of the remaining 1.1 miles of road to prevent unauthorized motorized travel;
- reconstruction of 11.5 miles of trail #076 on the former Davis Ranch Road alignment from the Scales Homestead site and the end of Forest Road #062 to the Davis Ranch (also known as Willey Ranch) up to Class 2, Class 3, and Class 4 standards, as well as, re-designation as a non-motorized public trail;
- conversion of 0.6 miles of existing undetermined road within the Krassel Work Center administrative site to system roads open to administrative and permitted use where public motorized access and parking at the airstrip would require Forest Service permission and a vault toilet would be installed to replace a pit toilet;
- issuance of a Forest Roads and Trail Act (FRTA) Easement to Valley County for operations and maintenance of 30.3 miles of the South Fork salmon River Road from the Warm Lake Highway north to the confluence with the East Fork South Fork Salmon river Road; and,
- conversion of the existing .3 miles of unauthorized route accessing Pilot Peak Spring from an unauthorized route to a Trail Open to All Vehicles and actions to control traffic impacts at the spring would be taken as necessary.

#### Forest Plan Amendments needed to implement Alternative B:

- Waive Forest Plan standard 1222 in order to convert 0.7 miles of existing undetermined routes that are currently used for administrative and permitted use to system ML2-AP roads, thus adding roads to the system, and to convert 0.3 miles of undetermined road that accesses the Pilot Peak Spring to TOV.
- Waive Forest Plan standard 1203, Forest-wide guideline WRGU05, and Forest-wide guideline WRGU03 in order to convert the current non-motorized Cougar Creek trail to a 2-wheel motorized trail in Recommended Wilderness.

#### Alternative C (Watershed Improvement Emphasis)

Alternative C is a variation of Alternative B and the No Action Alternatives that seeks to emphasize watershed improvement actions.

The Actions proposed under Alternative C are the same as Alternative B for all projects, except:

- An additional 56 miles of closed system roads would be considered for decommissioning and 29 miles of closed system road with dual designation as a trail would be converted to motorized or

nonmotorized trails;

- the gate at the Confluence Site would be removed and the road opened to the public, eliminating the need for the vehicle turnaround at the gate as proposed in Alternative B;
- the 3 miles of Hamilton Bar/Three Mile Road proposed for decommissioning in Alternative B would remain open to full size motor vehicle access but be narrowed from a 20' road prism down to a 14' road prism and dispersed camping would be planned for along the road corridor;
- only the Miners Peak Extension and the Jakie Creek short loop would be designated as new ATV trail, totaling 8.9 miles, for the Little Buckhorn Creek ATV Trails project,
- the 1.2 miles of the old Brewer Homestead Site Access Road (Route ID 503403300) proposed for ATV trail designation of the first 0.1 miles and closure of the remaining 1.1 miles in Alternative B would be entirely decommissioned and blocked to ATVs in Alternative C while still allowing for foot and horse traffic,
- the Cougar Creek Trail would remain a non-motorized trail and maintain the current alignment as proposed in Alternative A;
- the Davis Ranch Road would be re-designated as a non-motorized trail and reclassified as a Class 1 trail from the Scales Sites and the end of Forest Road #062 to the Davis Ranch, the closure to pack and saddle animals would be lifted, and stream crossings would be re-engineered.

Forest Plan Amendments needed to implement Alternative C:

- Waive only Forest Plan standard 1222 in order to convert 0.7 miles of existing undetermined routes that are currently used for administrative and permitted use to system ML2-AP roads, thus adding roads to the system, and to convert 0.3 miles of undetermined road that accesses the Pilot Peak Spring to TOV.

#### Alternative D (Motor Vehicle Opportunity Emphasis)

Alternative D is a variation of the Alternative B and the No Action Alternatives that seeks to emphasize motorized vehicle opportunities.

The Actions proposed under Alternative D are the same as Alternative B for all projects except:

- An additional 50 (6 less than Alternative C) miles of closed system roads would be considered for decommissioning and 36 miles (7 more than Alternative C) of closed system road with dual designation as a trail would be converted to motorized or non-motorized trails;
- the Hamilton Bar/Three Mile Road project would provide full size motor vehicle access for the first 1.4 miles and then 2-wheel motorized vehicle access for the last 1.6 miles
- reconstruction of 11.5 miles of trail #076 on the former Davis Ranch Road alignment from the Scales Homestead site and the end of Forest Road #062 to the Davis Ranch (also known as Willey Ranch) up to Class 2, Class 3, and Class 4 standards and lift closure order to leave trail open to 2-wheel motorize, pack and saddle and hiker use.

Forest Plan Amendments needed to implement Alternative D:

- Waive Forest Plan standard 1222 in order to convert 0.7 miles of existing undetermined routes that are currently used for administrative and permitted use to system ML2-AP roads, thus adding roads to the system, and to convert 0.3 miles of undetermined road that accesses the Pilot Peak Spring to TOV.
- Waive Forest Plan standard 1203, Forest-wide guideline WRGU05, and Forest-wide guideline WRGU03

in order to convert the current non-motorized Cougar Creek trail to a 2-wheel motorized trail in Recommended Wilderness.

#### IV. Location

The project area is located on Boise and Payette National Forest System lands located in Valley County, within the middle and lower South Fork Salmon River in Payette Forest Plan Management Area 12 as shown on the attached map (Figure 1) and the Boise Forest Plan Management Area 19 Warm Lake. The project area is approximately 12 air miles east of McCall, Idaho, and falls within T. 2 N, south to T. 15 N, and R. 4 E east to R. 8 E, Boise meridian.

T.15.N., R.06.E., sec 02; T.16.N., R.05E., 01, 02; T.16.N., R.06.E., sec 01, 02, 03, 05, 06, 11, 12, 14, 23, 26 27, 34, 35; T.16.N., R.07.E., sec 04, 05, 06; T.17.N., R.05.E., 01, 02, 03, 11, 12, 13, 14, 23, 24, 25, 26, 35, 36; T.17.N., R.06.E., sec 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36; T.17.N., R.07.E., sec 04, 05, 06, 07, 08, 09, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, 33 Boise Meridian, Valley and Idaho Counties Idaho



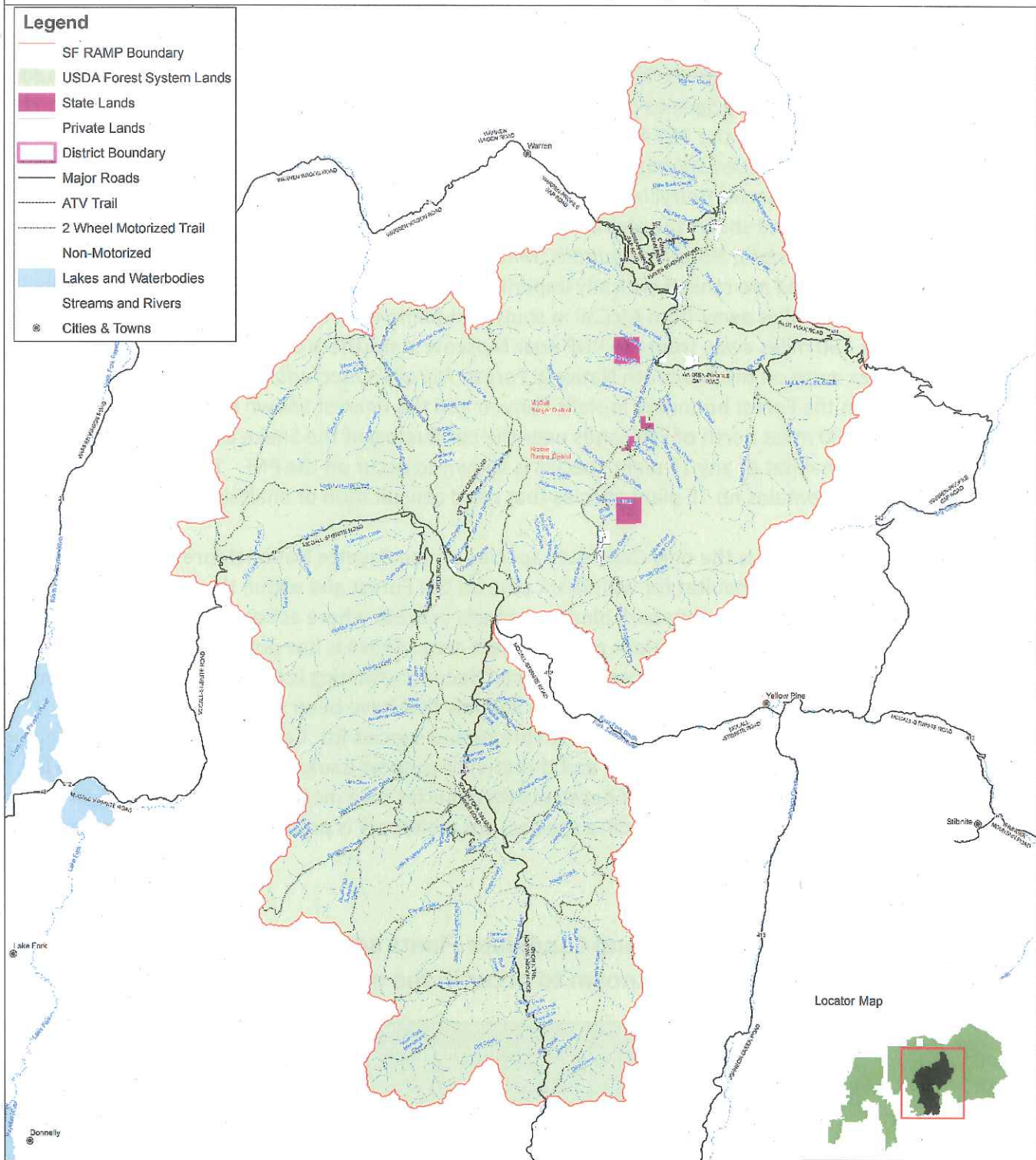


## USDA Forest Service Payette National Forest & Boise National Forest

### South Fork Salmon River Restoration and Access Management Project: Vicinity Map

#### Legend

- SF RAMP Boundary
- USDA Forest System Lands
- State Lands
- Private Lands
- District Boundary
- Major Roads
- ATV Trail
- 2 Wheel Motorized Trail
- Non-Motorized
- Lakes and Waterbodies
- Streams and Rivers
- Cities & Towns



Locator Map



Prepared by: McCall Ranger District

GIS Department

Produced: 7/24/2018

Projection: UTM 11 N, NAD83

File: \\forest-districts-mapserver\GIS\workspace\GIS\2018\MapServer\MapServer\_Vicinity\_SFRAMP.mxd

0 2.5 5 10 Miles

The U.S. Department of Agriculture, Forest Service, uses the most current and complete data available. GIS data and product accuracy may vary. They may be derived from a variety of sources, including aerial photography, ground surveys, and other data. Using GIS products for purposes other than those for which they were created may result in errors. The Forest Service assumes no liability for any errors, omissions, or delays in providing GIS products without notice.



July 24, 2018

## V. Existing Environment: Threatened, Endangered, Candidate, Proposed and Sensitive Species

### Threatened, Endangered, Proposed and Candidate Plant Species:

No populations of any TE plant species are known to occur on the PNF. From 1995 to 2002 the USFWS added five TEPC species to the PNF 90-Day Species List because potential habitat for these species was thought to occur on the PNF. Since that time the PNF Forest Botanist has surveyed, analyzed projects effects, and consulted on the Threatened species *Spiranthes diluvialis*, *Howellia aquatilis*, *Mirabilis macfarlanei*, *Silene spaldingii* and the Candidate species *Botrychium lineare*. Table 1 lists the federally listed plants that the PNF has consulted on in the past and shows the global and state rarity ratings as well as global distributions of these species. *Spiranthes diluvialis*, *Howellia aquatilis*, *Mirabilis macfarlanei*, *Silene spaldingii* are listed Threatened by the USFWS and are ranked critically imperiled in Idaho and imperiled globally. *Spiranthes diluvialis* occurs about 300 miles away from McCall in southeast Idaho near the Palisade Dam. *Howellia aquatilis* occurs about 150 miles away from the PNF near Moscow in northern Idaho. *Botrychium lineare* occurs about 100 miles away on the Sawtooth National Forest. *Mirabilis macfarlanei* occurs approximately 35 miles downstream from the Forest boundary in Hells Canyon and the nearest known population of *Silene spaldingii* occurs about 30 miles north of PNF lands near the confluence of the Snake and Salmon River. No occupied or unoccupied habitat of any TE plant species is known to occur on the PNF. The most recent List Update from the USFWS contains no TE plant species that need consultation or analysis (USFWS, 2011).

*Pinus albicaulis* (whitebark pine) is the only Candidate species on the Payette National forest and there are both occurrences of and suitable habitat for whitebark pine on the Forest and within the project area boundary. There is low potential for whitebark pine individuals in areas where actions are proposed, as most of the proposed actions are at lower elevations of the project area. There is low potential for individuals of whitebark pine to be found at higher elevations where road decommissioning is proposed. The U.S. Fish and Wildlife Service defines Candidate species as plants and animals that have been studied and should be proposed for addition to the Federal Endangered and Threatened species list. Candidate species have sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded because other species take more precedence. No consultation is required at this time for Candidate species, but whitebark is protected under the Regional Forester's Sensitive species guidelines.

**Table 1. Federally Listed Threatened and Candidate Plants addressed in the past or currently on the PNF. Highlighted species are known to occur in the project area boundary.**

Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	USFWS Listing Status	Global Distrib. <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
<i>Botrychium lineare</i> (Slender moonwort)	C-G1	SH	C-G1	sd	N	N	



Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	USFWS Listing Status	Global Distrib. <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
<i>Howellia aquatilis</i> (Water howellia)	T-G2	S1	T- G2	sd	N	N	Not known from the PNF. Occurs mainly near forest edges in small vernal, freshwater wetlands, ponds and oxbows that fill with water (usually <1m. deep) in late fall/winter and dry up by the end of the growing season. 2500 - 4500 ft. elevation.
<i>Mirabilis macfarlanei</i> (MacFarlane's four-o'clock)	T-G2	S2	T- G2	le	N	N	Not known from the PNF. Occurs on steep grassland and shrub communities in canyon lands from 1500-2500 feet in elevation. Flowers from May -June
<i>Pinus albicaulis</i> (Whitebark pine)	C- G3G4	S3	C	-	N	N	Subalpine communities at elevations between 7000-10,000 feet in elevation
<i>Silene spaldingii</i> (Spalding's silene)	T-G2	S1	T- G2	re	N	N	Grasslands and sagebrush-steppe habitats from 1900 to 3600 feet in elevation. No populations or habitat currently known from the PNF
<i>Spiranthes diluvialis</i> (Ute Ladies'-tresses)	T-G2	S1	T- G2	re	N	N	Occurs along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams from 2100 -6400 feet. No populations or habitat currently known from the PNF

<sup>1</sup>Global - Global ranking as assigned by Natural Heritage Program and Idaho Native Plant Society. T = Threatened, C = Candidate. G1 = Globally Critically Imperiled, G2 = Globally Imperiled <sup>2</sup>State - Idaho State Ranking. SH = State Historical Occurrence, S1 = State Critically Imperiled, S2 = State Imperiled. Global Distribution - d =disjunct, le = local endemic (< 100 square miles), re = regional endemic (distribution 100-10,000), sd = sparsely distributed (isolated populations), p = peripheral, w = widespread, cb = circumboreal, circumpolar.

### Sensitive Plant Species:

A review of the Idaho Fish and Game rare plant data, Forest records, and monitoring data revealed that the following Payette National Forest Sensitive species occur within the boundary of the project area: *Allotropa virgata* (candystick); *Calamagrostis tweedyi* (Cascade reedgrass); *Halimolobos perplexa* var. *perplexa* (puzzling halimolobos); *Lewisia sacajawean* (Sacajawea's bitterroot); *Mimulus clivicola* (bank monkeyflower) and *Triantha occidentalis* ssp. *brevistyla* (short-style tofieldia). The following Payette National Forest Watch plant species occur in the project boundary: *Epipactis gigantea* (giant hellibore orchid); *Helodium blandowii* (Blandow's helodium); *Polystichum kruckebergii* (Kruckeberg's sword-fern); *Schistostega pennata* (luminous moss) and *Ribes wolfii* (wolf's current).

Descriptions of suitable habitat for each of these species can be found in Tables 3 and 4. There is only one population of any of the above listed species, a population of Blandow's helodium in Phoebe Meadows, which occurs in an area where actions are proposed as a part of this project. This population is located in a portion of Phoebe Meadows that is currently bisected by a trail open to motorcycles. There is low potential for undetected occurrences of the rest of the above-listed Sensitive species in places where ground-disturbing activities are proposed. The Loon Lake trail and bridge projects low to moderate potential for Blandow's helodium, giant hellebore orchid, and short-styled tofieldia in wet portions of the projects and candystick in dry portions of the projects. There is low to moderate potential for giant hellibore orchid at the Pilot Spring site. There is moderate potential for bank monkeyflower in the road cuts of roads that are proposed for decommissioning. There is very low potential for Sacajawea's bitterroot in any of the areas where actions are



proposed.

**Table 2. Federal, State, and Forest Service status of rare plant species with potential or known habitat on the Payette National Forest. Highlighted species are known to occur in the project area boundary.**

Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	Forest Service Status <sup>3</sup>		Global Distribution <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
			Regional	PNF Plan				
<i>Allium madidum</i> (swamp onion)	G3	S3	S	S	re	N	N	Occurs western Idaho in seasonally wet meadows between 3800-9500 feet elevation –blooms early May-June. Know from around McCall
<i>Allium tolmiei</i> var. <i>persimile</i> (Tolmie's onion)	G4/T3	S3	S	S	le	N	N	Occurs on the west side of the PNF in scablands on rocky soils between 3000-5000 feet elevation –blooms late May to early July
<i>Allium validum</i> (Tall swamp onion)	G4	S3	N	W	w	N	N	Known from only the westside of PNF in high elevation swampy meadows
<i>Allotropa virgata</i> (candystick)	G4	S3	S	S	d	M	Y	Known only from old growth lodgepole pine around Warren.
<i>Artennaria arcuata</i> (Meadow pussytoes)	G2	S1	N			N	N	Collected near Burgdorf needs Forest verification
<i>Arabis sparsiflora</i> var. <i>atrorubens</i> (Sicklepad Rockcress)	G5T3	S3	W			N	N	Known from Emery Creek in ponderosa pine grasslands between 2300-3500 feet elevation –blooms May -July
<i>Astragalus paysonii</i> (Payson's milkvetch)	G3	S3	S	S	re	N	N	On PNF known only from Salmon River in open grasslands from 4500- 6500 feet mixed forest openings flowers July -August
<i>Astragalus vexilliflexus</i> var. <i>vexilliflexus</i> (bent flowered milkvetch)	G4/T4	S1	S	S	d	N	N	Restricted to the Cinnabar Stibnite area on the PNF occurs on subalpine ridges in subalpine fir and white bark pine habitat from 7500-8500 feet
<i>Botrychium lanceolatum</i> var. <i>lanceolatum</i> (Lance-leaved moonwort)	G5T4	S3	N	W	cb	N	N	Occurs in moist open woodlands, meadows and roadsides at 3500-5500 feet elevation – visible from early July to August – found near Burgdorf.
<i>Botrychium simplex</i> (Least moonwort)	G5	S2	S	W	cb	N	N	Occurs in moist open woodlands, meadows and roadsides at 3500-5500 feet elevation – visible from early July to August –found near Burgdorf.
<i>Buxbaumia viridis</i> (green bug moss)	G3G4	S3	N	W	w	N	N	Occurs mesic forests form 3500-6500 feet elevation –visible May-August.
<i>Calamagrostis tweedyi</i>	G3	S2	S	S	re	Y	Y	Subalpine moist meadows often growing at timber edges between

Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	Forest Service Status <sup>3</sup>		Global Distribution <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
			Regional	PNF Plan				
(Cascade reedgrass)								5000-6500 feet elevation –flowers late June to early August
<i>Camassia cusickii</i> (Cusick's camas)	G4	S2	S	S	re	N	N	Restrict to Council Weiser area along Snake River and foothills. Occurs ephemeral seeps on steep slopes in bunch grass communities between 1500-3500 feet elevation. Flowers May-June
<i>Carex aboriginum</i> (Indian Valley sedge)	G1	S1	N	W	le	N	N	Very limited wetlands species found in Adams county – currently not known from PNF. Elevations between 3200-4500 feet. Flowers and visible June
<i>Carex bipartita</i> (Arctic hare's foot sedge)	G5	S1	N			N	N	Reporter near Hazard Creek needs Forest verification
<i>Carex buxbaumii</i> (Buxbaum's sedge)	G5	S3	W			N	N	Wetlands, along streams and wet meadows between 2700-6500 feet elevation flowers late June to August
<i>Carex ebenea</i> (Ebony sedge)	G5		N			N	N	Reported on the Forest near Sater Meadows but not verified
<i>Carex flava</i> (Yellow sedge)	G5	S3	N			N	N	Reported on the Forest at Goose Lake but not verified
<i>Carex fuliginosa</i> (Shortleaf sedge)	G5		N			N	N	Reported on the Forest on Pearl Creek but not verified
<i>Carex rostrata</i> (Pale sedge)	G5	S2	N			N	N	Reported on the McCall District but not verified
<i>Carex stramineiformis</i> (Mt. Shasta sedge)	G5	S2	N			N	N	Reported on the McCall District but not verified
<i>Castilleja peckiana</i> (Peck's Indian-paintbrush)	G3G4		N			N	N	Reported near Lafferty Campground but not verified.
<i>Ceanothus prostratus</i> ssp. <i>prostratus</i> (Mahala-mat ceanothus)	G5/?	S1	N	W	d	N	N	Restricted to Adams County area on the PNF in Ponderosa pine shrub communities between 3000-4000 feet elevation -- identified without flowers
<i>Cirsium brevifolium</i> (Palouse thistle)	G3	S2	N			N	N	Reported collected in Hells Canyon and Adams Co. but not verified.
<i>Chrysothamnus nauseosus</i> spp. <i>nanus</i> (dwarf grey rabbitbrush)	G5/T4	S3	W			N	N	Occurs in blue bunch wheatgrass communities between 4000-5200 feet near Hitt Mountains
<i>Crepis bakeri</i> ssp. <i>idahoensis</i> (Idaho hawksbeard)	G4/T2	S2	N	W	le	N	N	Blue bunch wheatgrass grassland in Snake River Canyon, Mann Creek and Emery Creek and foothills between 2300-4000 feet elevation -- flowers May-June
<i>Cryptantha celosioides</i> (Cock's comb cat's-eye)	G5	S3	N			N	N	Reported from Hells Canyon but not verified



Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	Forest Service Status <sup>3</sup>		Global Distribution <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
			Regional	PNF Plan				
<i>Cryptantha simulans</i> (Pinewood cat's-eye)	G4		N			N	N	Reported from near Bear but not verified
<i>Diphasiastrum sitchense</i> (Alaskan clubmoss)	G5	S2	N			N	N	Reported north of McCall but not verified
<i>Douglasia idahoensis</i> (Idaho dwarf-primrose)	G3	S2	S	S	le	N	N	Subalpine forest with gravelly soils. Currently not found on PNF but plants known from Gold Fork Area on the Boise NF
<i>Draba incerta</i> (Yellowstone draba)	G5	S2	N	W	re	N	N	Historic site near Warren in subalpine high elevation terrain between 7900-9500 feet.
<i>Eatonella nivea</i> (White eatonella)	G4G5	S3	N	W	d	N	N	Sagebrush grasslands. Known from Rocky Comfort Area between 3200-4200 feet in elevation. Flowers May-June
<i>Epilobium palustre</i> (Swamp Willow Weed)	G5	S3	N	W	w	N	N	Wet meadows, stream and seep areas from Ponderosa pine habitat to subalpine fir from 2800-6200 feet in elevation. Reported from Squaw meadows.
<i>Epipactis gigantea</i> (Giant helleborine orchid)	G3G4	S3	N	W	sd	Y	Y	Moist areas such as springs, streambanks, seeps and thermal sites between 2800-5300 feet elevation. South Fork Salmon River.
<i>Ericameria bloomeri</i> (Bloomer's goldenweed)	G4	S1	N			N	N	Reported from Lava Butte not verified
<i>Ericameria nauseosa ssp. nanus</i> (Dwarf grey rabbitbrush)	G5/T4	S3	N	W	re	N	N	Known only from the Hitt Mountains
<i>Grindelia howellii</i> (Howell's gumweed)	G3	S1	N			N	N	Reported from the South Fork Salmon River but not verified
<i>Hackelia davisii</i> (Davis' stickseed)	G3	S3	N	W	le	N	N	Restricted to grasslands along Main Salmon River & Middle Fork around 3500 feet in elevation
<i>Halimolobos perplexa var. perplexa</i> (Puzzling halimolobos)	G4/T3	S3	S	S	le	Y	Y	Open sites in ponderosa pine, mixed conifers and scree slopes Salmon river drainages between 3500-4600 feet --flowers from May-August
<i>Helodium blandowii</i> (Blandow's helodium)	G5	S2	N	W	cb	Y	Y	Moss -- occurs in wetlands and along streams between 3900-6600 feet elevation in and at edges of conifer forests on the eastside of PNF
<i>Juncus brevicaudatus</i> (Narrow-panicle rush)	G5		N			N	N	Reported from the South Fork Salmon River but not verified
<i>Juncus hallii</i> (Hall's rush)	G4G5	S2	N			N	N	Reported from Squaw meadows but not verified
<i>Leptodactylon pungens ssp. hazeliae</i> (Hazel's prickly phlox)	G5/T2	S2	S	S	le	N	N	Grows on near vertical rock outcrops and grasslands in Hells Canyon about 3200 feet in elevation and flowers from early May to

Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	Forest Service Status <sup>3</sup>		Global Distribution <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
			Regional	PNF Plan				
								July
<i>Lewisia sacajawean</i> (Sacajawea's bitterroot)	G2	S2	S	S	re	Y	Y	Mostly bare subalpine woodlands and open ridges but also in Ponderosa pine habitat from 4500-6500 feet in elevation – flowers from May-July.
<i>Lobaria scrobiculata</i> (Pored lungwort)	G4	S1	N	W	cb	N	N	Lichen occurring on rocks along the Salmon River between 2000-3000 feet elevation.
<i>Lomatium idahoense</i> (Idaho desert-parsley)	G4		N			N	N	Reported from the Jug Mt. area but not verified
<i>Mimulus clivicola</i> (Bank Monkeyflower)	G4	S3	S	S	re	Y	Y	Open pockets of moist, exposed mineral soil in forest gaps in Adams County where early spring moisture is available between 3200-5600 feet elevation flowers in early May- June
<i>Mitella nuda</i> (Naked bishop's cap)	G5		N			N	N	Reported from near Yellow Pine but not verified
<i>Orthotrichum consimile</i> (Orthotichum moss)	G4		N			N	N	Reported from Emery Creek RNA not verified
<i>Peraphyllum ramosissimum</i> (Wild crab apple)	G4	S2	N	W	sd	N	N	Sagebrush grasslands from 3200-5000feet elevation found only in Hitt and Sturgill areas on the PNF
<i>Phacelia minutissima</i> (Tiny-flower phacelia)	G3	S2	S			N	N	Reported from West Mountains not verified
<i>Penstemon seorsus</i> (Short-lobe beardtongue)	G4?	S2	N			N	N	Reported from Council Cuprum but not verified
<i>Pilophorus acicularis</i> (Nail lichen)	G4	S2	N	W	sd	N	N	Grows on rock and decaying wood, in shade and open sites from low to mid-elevation moist forests and road cuts between 2000-4200 feet elevation. Historical site near Fall Creek on McCall District
<i>Polystichum kruckebergii</i> (Kruckeberg's Sword-fern)	G4	S2	N	W	re	M	Y	High elevation ridgetops and cirques in subalpine fir zone and above between 5000-7500 feet elevation. Known from White Rock Peak on south Fork Salmon River
<i>Pyrrocoma (Haplopappus) radiata</i> (Snake River golden weed)	G3	S3	S	S	re	N	N	Steep rocky grasslands restricted to west side of the PNF in grasslands between 2200-3500 feet elevation flowers in late July
<i>Ribes wolfii</i> (Wolf's current)	G4	S2	N	W	d	Y	Y	Moist swales and sites in mixed conifer and subalpine forest from 4800-8000 feet typically on eastside of PNF near Enos Lake.
<i>Rubus bartonianus</i> (Bartonberry)	G2	S2	S	S	le	N	N	Canyon grass and shrub land in Hells Canyon between 1500-2100 feet elevation. Flowers in April & May.



Species Scientific Name (Species Common Name)	Global <sup>1</sup>	State <sup>2</sup>	Forest Service Status <sup>3</sup>		Global Distribution <sup>4</sup>	Suitable Habitat	Species Documented within project area or nearby	General Habitat Description
			Regional	PNF Plan				
<i>Salix glauca</i> (gray willow)	G5	S2	N	W	D	N	N	Taxonomic work show it is not known from PNF but needs verification
<i>Sanicula graveolens</i> (Sierra sanicle)	G4	S1	N	W	W	N	N	Subalpine fir zone in open granitic soils from 5500-7500 feet elevation known from Brundage Mountain area
<i>Saxifraga bryophora</i> var. <i>tobiasiae</i> (Tobias' saxifrage)	G2T2	S2	S	S	le	N	N	Subalpine fir restricted to Granite Mountain and Slab Butte area
<i>Schistostega pennata</i> (Luminous moss)	G4	S1	N	W	cb	Y	Y	Occurs on mineral soil in services on fallen tree root masses in mixed conifer, subalpine fir and spruce zones between 4500-7500 feet on the PNF near Hum Lake
<i>Sedum borschii</i> (Borch's stonecrop)	G4 ?	S2	N	W	sd	N	N	Rock outcrops from Ponderosa pine zone to subalpine fir from 1500-7500 feet elevation in Adams and Valley county on the PNF
<i>Sedum valens</i> (Salmon River sedum)	G1G2	S1S2	N	W	le	N	N	Restricted to rock outcrops and slopes of the Salmon River from Vinegar Creek to about French Creek
<i>Sphagnum platyphyllum</i> (Flatleaf peatmoss)	G5	S1	N			N	N	Known from fens in the Boulder summit area.
<i>Synthyris platycarpa</i> (Pennell's Kittenail)	G3+	S3	N			N	N	Reported from high elevations near Edwardsburg but not verified
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i> (Short-style tofieldia)	G5/T4	S1	S	S	d	Y	Y	Wet meadows, stream courses and bogs in the subalpine fir zone at elevations from 5000-7000 feet along Warren Wagon Road
<i>Trifolium douglasii</i> (Douglas' clover)	G2	S2	N	W	re	N	N	Grasslands from 3400-6500 feet in elevation known from areas west of McCall and the Council area
<i>Trifolium longipes</i> var. <i>multipedunculatum</i> (Many-stalked clover)	G5T3 T4	S1	N		-	N	N	Reported from Taylor Ranch and Clayburn area but not verified

<sup>1</sup>Global - Global ranking as assigned by Natural Heritage Program and Idaho Native Plant Society. T = Threatened, C = Candidate. <sup>2</sup>State - Idaho State ranking, SH = State Historical Occurrence, S1 = State critically imperiled, S2 = State Imperiled. <sup>3</sup>Forest Service Status - S = Region 4 Sensitive, W = Forest Watch plants, N = No current status. <sup>4</sup>Global Distribution - d = disjunct, le = local endemic (< 100 square miles), re = regional endemic (distribution 100-10,000), sd = sparsely distributed (isolated populations), p = peripheral, w = widespread, cb = circumboreal, circumpolar.

## Existing Motorized Use on Authorized and Unauthorized Routes

### Authorized Use:

Use of motorcycle and ATV trails has a significant spike during the fall hunting season. In October 2017, there were 55 trips on the Blackmare Trail (NFS Trail #100) and 608 trips on the Teapot ATV Trail (NFS Trail



#382). Other times of the year motorized use of trails is far less. For example in 2017 and 2018 there were fewer than 50 trips per month on the Blackmare and Teapot Trails. Use of open roads is greatest during the summer and many of the roads are closed due to snow in the winter. The most heavily used road is the SFSR Road (#474/647). From 1999 to 2008 the average trips per day in the summer and fall on the SFSR Road was 46 (traffic counter data on file, PNF). There are no known Candidate, Sensitive or Watch plant species occurrences on these trails.

#### *Unauthorized use:*

In general unauthorized use is limited to occasional traffic perhaps by a few individuals and in some cases associated with hunting. Use is limited enough that compaction, rutting, and erosion are generally not obvious. The known examples of unauthorized use are listed below. There are no known Candidate, Sensitive or Watch plant species occurrences on these trails or in these areas.

#### Known examples include:

- Eagle Rock Trail #090 which is no longer on Forest Visitor maps - Trail was cleared by the public in 2018 and motorcycle tracks observed (C. Zurstadt).
- Cougar Creek Trail #098 – Occasional motorcycle use. Tracks observed in 2017 and 2016 (C. Zurstadt).
- Teapot ATV Trail #382 – Two closed logging road spurs off of the open trail get occasional ATV use particularly during spring and fall hunting seasons. Tracks observed in 2017 (C. Zurstadt).
- Hamilton Bar Road (RD #50673) – Occasional ATV traffic beyond the closed gate (C. Zurstadt).
- Davis Road (Trail #076) – ATV traffic on the 2 mile section of the northern end to Johnson Creek, which is impassable to ATVs. Tracks observed in 2017 (C. Zurstadt).
- Brewer Homestead Site (Route ID 503403300) – ATV use occurs to the homestead site. Tracks observed in 2018 (C. Zurstadt).
- Scales Site accessed off of Del Davis Road (RD #50062) – Full size vehicle traffic and camping on the bench during hunting season. Tracks observed in 2017 and 2018 (C. Zurstadt). Hunting camps observed fall 2018 (memo on file, PNF).
- Pilot Peak Access Road (Route ID 503417000) – Regular use by hunters (C. Zurstadt personal communication with Fire Lookout and hunters who use the area).
- Deer Point Road (Route ID #503599000) – Motorcycle use during the hunting season and occasional ATV traffic. Tracks observed in 2018 (C. Zurstadt).
- Undetermined Road leading from Hettinger property south towards Lawrence Hole (Route ID 503376000) – Well-worn two track for full size vehicles. Road used for fishing and camping access. Tracks observed in 2018 (C. Zurstadt).
- China Glen Road (RD #50357) – Occasional motorcycle use after the gate is locked during October hunting season. Tracks observed in 2013 (C. Zurstadt).

## **VI. Effects of the Proposed Project**

### **Direct, Indirect, Cumulative Effects**

#### Alternative A (No Action)

Any undetected Candidate, Sensitive or Watch plant species occurrences and associated habitat would

continue to be susceptible to the direct impacts of: 1) habitat degradation from heavy, dispersed hiking, camping and driving/parking; and, 2) crushing and uprooting of plants and associated habitat from motorized use of unauthorized roads and trails.

Undetected Candidate, Sensitive and Watch plant species occurrences could also be susceptible to indirect impacts associated with dispersed and unauthorized use, such as: 1) noxious weed dispersal and establishment into occupied and suitable habitat that will not be directly impacted by the project; and, 2) sediment production and altered water and nutrient regimes associated with unauthorized use of roads, trails, campsites and parking areas.

The population of Blandow's helodium in Phoebe Meadows would continue to be heavily impacted under this alternative. Currently, the population is directly impacted by a series of braided, user-created treads where trail users have attempted to find a dry path across the wet meadow. The population is indirectly impacted by the hydrologic alterations to habitat caused by continued use and definition of the trails and the potential for weed seed dispersal into the otherwise pristine wet meadow habitat. Changes in water regimes and nutrients inputs can quickly impact wetland plants like Blandow's helodium. Under the No Action Alternative, the MVUM would be updated to match the existing trail alignment as an administrative action and signs would be installed to aid in navigation but the trail tread itself would not be improved or re-routed.

Alternative A creates higher risk to rare plant habitat and populations than the other alternatives because the other alternatives propose road decommissioning, rehabilitation, maintenance and obliteration that reduce sediment, weed corridors and access to rare plants. Alternative A is the only alternative under which existing detrimental impacts to a known Sensitive plant species occurrence, the Blandow's helodium population in Phoebe Meadows, would continue at current levels.

#### Alternative B, C and D

Direct effects to undetected Candidate, Sensitive and Watch plant species in the project area under the action alternatives could include trampling, crushing, removal of aboveground plant parts or removal from the soil from kicking or pulling, and removal of plants and/or disturbance to habitat from road decommissioning activities. Indirect effects to TESPC and Watch plant species in the project area could include sediment aggradation and depletion in TESPC and Watch plant species habitat and introduction of invasive species into occupied TESPC and Watch plant species habitats.

The following proposed activities from Table 1 (Watershed Improvement Actions) and Table 2 (Motorized Access Actions) have minimal potential to impact undetected populations of Sensitive and Watch species: Road Decommissioning, Hamilton Bar/Threemile Road, Davis Ranch Road, Loon Creek/Split Creek Trail, Phoebe Meadow Trail, FRTA easement on SFSR Road and Cougar Creek Trail. These projects have potential for impact to Sensitive and Watch species either because there is ground disturbance proposed in currently undisturbed sites and/or there is potential for suitable or occupied habitat to be present.

Conversely, the following proposed activities from Table 1 (Watershed Improvement Actions) and Table 2 (Motorized Access Actions) are not thought to have the potential to impact Sensitive and Watch species either because there is no new ground disturbance proposed and/or there is little or no potential for suitable or occupied habitat to be present: Confluence Site Plan, 33 Bend/Oompaul dispersed site plan, Jakie Creek Bridge, Little Buckhorn Creek ATV Trails, Brewer Site Access Road, Blue Lake and Tailholt Trailhead, Krassel Work Center Access Roads and Reed Ranch Airstrip Access Road and Pilot Peak Spring access road.



The motorized trail through Phoebe Meadows that currently bisects a population of Blandow's helodium, a Forest Sensitive plant species, would be re-routed under all of the action alternatives. Re-routing the trail would decrease direct and indirect impacts to the existing population of Blandow's helodium because the trail would no longer bisect the wet meadow or the Sensitive plant population. The decrease in direct and indirect impacts would be the same across all of the action alternatives because the trail will be re-routed under all action alternatives.

In general, the long term direct impacts to Sensitive and Watch plant species will decrease proportionally to the reduction of unmaintained, open and unauthorized roads within and leading to rare plant populations and habitat. All three action alternatives remove unmaintained and unauthorized roads and, by doing so, reduce the possibility of direct access to rare plant populations and the risks of plant trampling and habitat degradation. Alternatives C and D have the greatest likelihood of improving and conserving Sensitive and Watch plant species habitat, as the greatest number of miles of road will be decommissioned under these alternatives. Theoretically, the risks of sediment transfer to and from occupied habitat and the likelihood of exposure to invasive species will decrease proportionally to the reduction in unauthorized/unmaintained road use and increase proportionally to the number of miles of road obliteration and decommissioning.

All attempts to avoid adverse direct and indirect impacts to sensitive and other rare plants species is done by identifying populations during pre-disturbance surveys and following design features where TESPC and Watch plant species are located. On large scale projects with many phases of implementation there will always be some risk that individual plants and habitat will be impacted by casual trampling or incidental actions because of increased activity in the planning area. However, the absence of mapped TESPC and Watch plant species occurrences and potential habitat in the vicinity of all planned activities, aside from Phoebe Meadows trail re-route, makes the potential for impacts essentially the same across all action alternatives.

#### Effects from Forest Plan amendments to waive standards 1222, 1203 and SCT01:

The Forest Plan amendment to waive standard 1222 will not impact, directly or indirectly, whitebark pine or any Sensitive or Watch plant species, because the difference between the No Action and Action Alternatives is administrative, not functional. As such, there is no difference in impacts between alternatives.

The Forest Plan amendment to waive standard 1203, Forest-wide guideline WRGU05, and Forest-wide guideline WRGU03 would be needed in Alternatives B and D to convert the current non-motorized Cougar Creek trail to a 2-wheel motorized trail in Recommended Wilderness. These amendments would not have any direct impacts to Candidate, Sensitive or Watch plant because there are no known occurrences of these species along or in the vicinity of this trail. The potential for indirect impacts to undetected Candidate, Sensitive or Watch plant species individuals or populations is also low because there is minimal potential for suitable habitat along or in the vicinity of the trail. Alternative C is the Action Alternative that would have the lowest potential direct and indirect impacts to undetected Candidate, Sensitive or Watch plant species individuals or populations because the trail would remain non-motorized.

#### Cumulative Effects

Cumulative effects occur when existing conditions from past, present and reasonable and foreseeable future land management activities overlap in both spatial and temporal scales with the direct and indirect effects associated with the alternatives proposed activities. A complete list of past, present and reasonably



foreseeable future actions in the cumulative effects analysis area can be referenced in Appendix B of the EA. The effects of past, present and foreseeable actions listed in the appendix were considered on Forest lands in the analysis area.

All of these projects can result in additional disturbance openings for noxious and invasive species. Weed control is ongoing in the analysis area and each project is reviewed or surveyed for TESPC and Watch plant species and mitigation is developed where any of these species are found.

Action activities that eliminate or reduce cross-country travel and/or reduce sediment transport would reduce current and potential future interaction between cross-country travel and other forest actions, thereby reducing threats to all sensitive plant populations, whether directly impacted by the action alternatives or not. Alternatives B, C and D could result in fewer cumulative effects to rare plants by reducing the number of unauthorized travel routes and by providing road closures, maintenance, and obliteration.

Alternative A could have a continuance of cumulative effects as it would not reduce unauthorized road use or reduce the threat of sedimentation, weed invasion and direct access to rare plant habitat. Alternative A also has the greatest cumulative impact to the population of Blandow's helodium in Phoebe Meadows, as the unauthorized motorized trail would not be re-routed out of Blandow's helodium habitat under this alternative. Impacts from past, present and foreseeable actions that with potential to impact Blandow's helodium include altered sediment delivery, nutrient input and hydrology. All of the action alternatives will improve habitat for the populations of Blandow's helodium in Phoebe Meadows.

## VII. Determination

### Threatened, Endangered, Proposed and Candidate Plant Species:

Implementation of the action alternatives will have No Effect on Threatened, Endangered or Proposed plant species.

Implementation of the action alternatives, including mitigation measures, may adversely impact individuals of whitebark pine, a Candidate plant species, but is not likely to result in a loss of viability in the Planning area, nor cause a trend toward federal listing.

### Sensitive Plant Species:

Implementation of the action alternatives, including mitigation measures, may adversely impact individuals of Sensitive plant species, but is not likely to result in a loss of viability in the Planning area, nor cause a trend toward federal listing.

## VIII. Rationale

### Threatened, Endangered, Proposed and Candidate Plant Species:

The determination of *No Effect* for Threatened, Endangered or Proposed plant species was made because there are no Threatened, Endangered or Proposed plant species or suitable habitat on the Payette National Forest.

The determination of *may adversely impact individuals but is not likely to result in a loss of viability in the Planning area, nor cause a trend toward federal listing* was made for whitebark pine because: 1) there are no known occurrences or suitable habitat in areas to be disturbed under the action alternatives since proposed activities are at lower elevations where populations of whitebark pine are unlikely to occur; 2) many of the proposed activities are confined to already disturbed areas, such as trails, campsites and roads; and, 3) PDFs will minimize any potential impact if whitebark pine are encountered.

### Sensitive Plant Species:

The determination of *may adversely impact individuals but is not likely to result in a loss of viability in the Planning area, nor cause a trend toward federal listing* was made for all Sensitive plant species known to occur within the project area because: 1) the only known occurrence of a Watch species that is known to overlap with proposed activities under all action alternative would benefit the species if an action alternative is selected (Blandow's helodium in Phoebe Meadows); 2) there are no known occurrences or suitable habitat for Sensitive or Watch species in remaining areas where activities are proposed under action alternatives; 3) many of the proposed activities are confined to already disturbed areas, such as trails, campsites and roads; and, 4) PDFs will minimize potential impact to Sensitive and Watch plant species that are currently undetected if they are encountered during pre-disturbance surveys.

## IX. Mitigations

The following management requirement helps ensure the continued viability of all species that are known to occur within the project boundary. None of these species have known locations that overlap with proposed ground disturbance, but there is potential for suitable and occupied habitat to be found during project implementation.

- 1) Avoid removing or trimming dead and live whitebark pine whenever possible during road maintenance, decommissioning, obliteration, and restoration.
- 2) If ground disturbance is to occur in wetlands or along streams in and at the edges of conifer forests on the eastside of the PNF between 3,900 and 6,600 feet elevation, survey for Blandow's helodium (*Helodium blandowii*)- a moss- before beginning ground disturbance. This will definitely apply to the Loon Lake trail and bridge project.
- 3) Re-route the motorized trail around Phoebe Meadows to enhance habitat for the known population of Blandow's helodium (*Helodium blandowii*) that the motorized trail currently bisects and to ensure that the hydrology of the meadow that Blandow's helodium requires to persist is not further impacted.
- 4) If ground disturbance is to occur along streams or wet meadows between 2,700 and 6,500 feet elevation, survey for Buxbaum's sedge before beginning ground disturbance. This will definitely apply



to the Loon Lake trail and bridge project.

- 5) If ground disturbance is to occur in a subalpine community, survey for whitebark pine before beginning ground disturbance.
- 6) If ground disturbance is to occur in old growth lodgepole pine communities, survey for candystick (*Allotropa virgata*) before beginning ground disturbance.
- 7) If ground disturbance is to occur in or near subalpine moist meadows between 5,000 and 6,500 feet elevation, survey for Cascade reedgrass (*Calamagrostis tweedyi*) before beginning ground disturbance.
- 8) If ground disturbance is to occur on open or scree slopes of Salmon River drainages between 3,500 and 4,600 feet elevation that are dominated by ponderosa pine, mixed conifer, or just scree, survey for Puzzling halimolobos (*Halimolobos perplexa* var. *perplexa*) before beginning ground disturbance.
- 9) If ground disturbance is to occur in mostly bare subalpine woodlands, on open ridges or in ponderosa pine habitat between 4,500 and 6,500 elevation, survey for Sacajawea's bitterroot (*Lewisia sacajaweanae*) before beginning ground disturbance.
- 10) If ground disturbance is to occur in open pockets of moist, exposed mineral soil in forest gaps where early spring moisture is available between 3200-5600 feet elevation, survey for bank monkeyflower (*Mimulus clivicola*) before beginning ground disturbance.
- 11) If ground disturbance is to occur in moist swales or mixed conifer or subalpine forests between 4,800 and 8,000 feet elevation (and especially if on the eastside of the PNF near Enos Lake), survey for wolf's current (*Ribes wolfii*) before beginning ground disturbance.
- 12) To protect potential populations of luminous moss (*Schistostega pennata*), keep fallen tree root masses found in mixed conifer, subalpine fir and/or spruce forests between 4,500 and 7,500 feet elevation near Hum Lake intact.
- 13) If ground disturbance is to occur in wet meadows, stream courses or bogs in the subalpine fir zone between 5,000 and 7,000 feet elevation along and near Warren Wagon Road, survey for short-style tofieldia (*Triantha occidentalis* ssp. *brevistyla*) before beginning ground disturbance.
- 14) If ground disturbance is to occur in or near moist areas, springs, streambanks, seeps and/or thermal sites, survey for giant hellibore orchid (*Epipactis gigantea*) before beginning ground disturbance.

## X. References

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